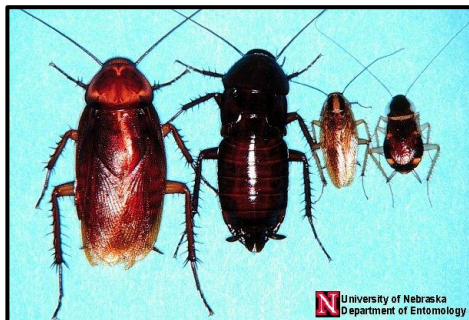


COCKROACH CONTROL

Image 1 – Common Cockroach Species



Cockroaches are a concern for food service establishments since cockroaches have the potential to transmit disease to food, equipment, and utensils; which ultimately can lead to ingestion into the human body and cause an illness. While there are over 3,500 species of cockroaches worldwide, there are four that are of particular concern for food service establishments in Kansas: (1) American cockroach, (2) Oriental cockroach, (3) German cockroach, and (4) Brown Banded cockroach (shown from left-to-right in Image 1); with the German cockroach being the most prevalent.

Identifying what type of cockroach has infested your establishment is an important step, as each species requires a different treatment and area of focus to eliminate. Your Pest Control Operator can help you with this; or see the City of Wichita's handout *Pest Identification for Food Professionals*. Prevention measures, however, are the same, regardless of species.

BASIC PREVENTION MEASURES

Examine all shipments before bringing packages into the establishment.

Cockroaches are transient in nature; they like to hitchhike. Cockroaches are often introduced into an establishment as passengers in shipments of food, boxes of supplies, or in infested equipment. If dead insect parts, insect feces, dead cockroaches, or live cockroaches are observed, refuse the shipment or treat and clean the equipment to kill any cockroaches and eggs before allowing the items into the establishment.

Store all items at least 6-inches off the floor.

Storing items up off the floor help keep pests from reaching food, equipment, and utensils; and having items at least 6-inches up allows for both visual inspection and ease of cleaning of any debris that might have accumulated under the shelves.

HINT: Wrapping lower legs of shelves and tables in Teflon tape helps prevent cockroaches from climbing, as their legs cannot grip onto the surface.

Hang all damp mops up to dry.

Damp mops that are resting on the ground provide a good habitat where cockroaches like to live and breed.

Seal all openings in both internal and external walls and around drains.

Cockroaches can squeeze through tight openings. In fact, cockroaches prefer hanging out in small, tight crevices (see image 2); especially if they are warm, dark, and near food. Sealing openings help prevent access to areas for cockroaches to live and blocks movement. Some areas to examine are openings around plumbing pipes, electrical conduit and boxes, base board, sink basins, and floor drains. Use *silicone* based caulk. Latex and acrylic caulks shrink over time, exposing openings, and are also edible by cockroaches. Silicone caulk is more flexible and waterproof, which resists breaking, and are not edible.

Maintain plumbing systems in good repair.

HINT: Whitish residue at plumbing connections is a sign of a slow water leak.

Cockroaches, especially German and Oriental, need water to survive. Limiting access to moisture makes prevention and elimination efforts easier. Repair any leaks immediately and insulate piping; condensation and sweat on cold water pipes

provides enough moisture to sustain cockroaches. Don't forget to also examine condenser units on coolers as a possible water source, too.

Remove unnecessary equipment from the establishment.

Unused or infrequently used equipment provides places for cockroaches to hide, live, and breed.

Maintain a clean facility.

Eliminate food sources by cleaning and sanitizing all surfaces regularly. Without food, cockroaches will leave or die off.

NON-TOXIC CONTROL MEASURES

Non-toxic control measures are the preferred method of eliminating cockroaches, as these reduce the likelihood of cross-contamination of food and equipment with toxins. Several non-toxic control measures are available; in addition to the basic prevention measures.

Trapping

Place sticky traps in areas of high occurrence. For a higher success rate, use traps that have had synthesized cockroach pheromones added.

Freezing

Cockroaches rapidly exposed to cold temperatures will die; their bodies cannot adjust to the sudden temperature change. Freezing is especially effective for killing cockroaches that have infested small appliances and other equipment. Place the items into a plastic sack and tie the sack shut. Place the sack and item into a freezer for several days; this should kill the cockroaches. When removed, be sure to clean thoroughly and sanitize.

Heating

Cockroaches cannot develop or reproduce in temperatures above 115°F to 120°F. Remove heat

Image 2 – German Cockroaches in a Crack

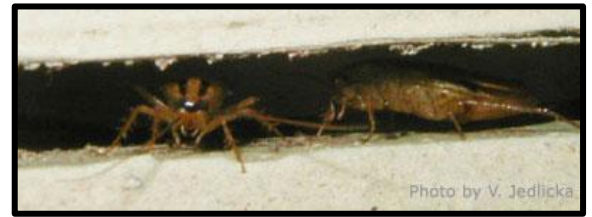


Photo by V. Jedlicka

sensitive equipment from the establishment and raise the temperature to 140-150°F for five to six hours to kill off the cockroaches. Clean and sanitize afterwards.

Vacuuming

A vacuum can be used to remove cockroaches – adults and nymphs – and egg sacks. Use the narrow tube nozzle attachment – or create your own – to vacuum in the crevices where cockroaches like to live. *Immediately* place the vacuumed contents into a bag, tie it shut, and place into a freezer or in a sealed container outside the establishment. Vacuuming does not kill cockroaches. Following this procedure will prevent the roaches from crawling out of the vacuum or sack and back into the establishment.

Eliminate Food & Harborage Conditions

Follow all the basic prevention measures. Additionally, do not keep unnecessary cardboard boxes and paper sacks on the premise. Cockroaches will eat the glue used to close the boxes and sacks, as well as the boxes and sacks themselves, for food.

PESTICIDE CONTROL MEASURES

Major infestations will require the use of pesticides in addition to non-toxic control measures. The use of pesticides is governed by both federal and state law. In Kansas, restricted use pesticides can only be applied by a certified applicator. Food service establishments should work with a Pest Control Operator that has a Kansas Commercial Applicator Certification, with at least one employee endorsed in category area 7B – Stored Products. Certification is issued by the Kansas Department of Agriculture. Active certifications may be checked online at

http://www.ksda.gov/includes/document_center/pesticides_fertilizer/Certification/pestccert.pdf.



Image 3 – Life Stages of the German Cockroaches with Ootheca (egg sack)

ADDITIONAL RESOURCES

Information on food safety and pest control, including additional handouts, is available on the City's website at <http://wichita.gov/CityOffices/Environmental/>.

Online versions (English, Spanish, & Japanese) of *The Cockroach Control Manual* provided by the University of Nebraska-Lincoln Extension office are available at <http://lancaster.unl.edu/pest/RoachManual.shtml> and online versions (English, Spanish, Arabic, & Vietnamese) are available at <http://lancaster.unl.edu/pest/cockroaches.shtml>.

All images used are from the Department of Entomology at the University of Nebraska-Lincoln; images used with permission; photographer cited when known.

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